CHAPTER 4

EVOLUTION OF NORMATIVE FRAMEWORK OF LAW RELATING TO GLOBAL WARMING AT INTERNATIONAL LEVEL

Law has intervened, at both the national and at the international level, to assist the people of the world in sustaining a healthy environment. The environment that surrounds us is essential to maintaining human life and to sustaining development and the term ‘environment’ encompasses both the features and the products of the natural world and those of human civilization.

Development in the recent decades has brought deadly effects on ecosystem. Today, the whole world is facing the problem of environmental degradation due to development. In the name of scientific development and rapid industrialization, man has started distancing himself from the nature and even developed an urge to conquer the Mother Nature. The process of development which although meant for human happiness have become responsible for the disasters, particularly in the context of ecology and environment.

The global environmental problems are the direct or indirect consequence of local and individual actions. Man’s desire, propensity and capability to race for the development has led to environmental problems such as global warming, greenhouse gas effect, climate change, ozone layer depletion, acid rains, sea level rising and loss of biological diversity on the planet.

The need to provide for sustainable development for all states and for future generations, have made it necessary to intensify cooperation among all States at the universal regional and bilateral levels to protect the integrity of the environment. Effective protection of the environment cannot be undertaken unilaterally, but rather requires international cooperation and international regulation.

Environmental issues present challenges for the system of legal relations among nations. As environmental concerns transcend boundaries as pollution spreads

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2 Dr. Subhash Chandra Singh, “Global Dimensions of Ecological Crisis: The Discourse of Sustainable Use of the Earth Planet”, Vol-30, IBR, pp. 391-392
3 Ali Mehdi, ‘Climate Change and Biodiversity: India’s Perspective and Legal Framework, JILI, Vol. 52: 3 and 4, p. 343
or issues of the global commons arise. As this happens, legal questions transcend the traditional tools of the national legal system and acquire a regional or international dimension. International environmental law presents a number of new problems and challenges to the international legal community.5

4.1 Development of International Environmental Law

The international legal order was traditionally built upon the nation state system. That legal order is a group of rules regulating the conduct of nation states with respect to one another. The traditional international legal order needed only to concern itself with the external relations of states toward each other. Each state unit was thought to be self contained, interacting with other state units only in limited ways. Thus, traditional international law concerned itself primarily with actions of the state entity towards other state entities- that is to say, with truly international activities.6

The traditional legal order of the environment was also essentially a laisser-faire system oriented towards the unfettered freedom of states. Such limitations on freedom of action as do exist have been formulated from perspectives other then the specifically environmental and have emerged in ad hoc fashion.7 Now issues in the international legal order, including environmental concerns and topics such as human rights, have introduced new global dimensions. Nevertheless the traditional legal system remains the foundation of these new legal orders.8

Thus, in the environmental field it is clear that international law is gradually moving away from an approach which treats international society as comprising a community of states, and is increasingly encompassing the persons (both legal and natural) within and among those states.

International environmental law initially conceived as an institution would establish rules for the management of environmental problems which started to become all too obvious in the late 1970s. In dealing with these problems, states gradually discovered that they are not amenable to easy solutions.9

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Today nature of the international environment has undergone a change. A distinct body of law now exists for the protection of the environment at the national and international level. The international environmental laws, as do now exist, originate from the applications of principles generated by classical international law and its sources.

International Environmental Law at a very early stage of development has evolved at a time when the heterogeneity of the international community rapidly intensified and when, simultaneously, economic, problems correspondingly increased and the developmental needs and aspirations of the poorer states accordingly become urgent. The progress made on developing a body of international law with a purely environmental focus is a remarkable achievement despite the strains the rapidity of developments has imposed on the international legislative process. Thus modern international environmental law can be traced directly to international legal developments which took place in the second half of the nineteenth century.

In tracing the development of the international environmental law general tendencies and themes maybe discerned. First, the development of principles and rules of international environmental law through treaties, other international acts and custom has tended to react to events or incidents or the availability of scientific evidence, rather than anticipate general or particular environmental threats and put in place an anticipatory legal framework. Secondly, developments in science and technology have played a significant catalytic role: without the availability of scientific evidence, new rules of law are unlikely to be put in place. Thirdly, the principles and rules of international law have developed as a result of a complex interplay between governments, non-state actors and international organizations.

10 International environmental law has evolved over at least four distinct periods, reflecting developments in scientific knowledge, the application of new technologies and an understanding of their impacts, changes in political consciousness and the changing structure of the international legal order and institutions. The first period began with bilateral fisheries treaties in the nineteenth century, and concluded with the creation of the new international organizations in 1945. The second period commenced with the creation of the UN and culminated with the UN Conference on the Human Environment, held in Stockholm in June 1972. The third period ran from the 1972 Stockholm Conference and concluded with the UN Conference on Environment and Development (DNCETJ) in June 1992. The fourth period was set in motion by UNCED, and may be characterized as the period of integration when environmental concerns should, as a matter of international law and policy, be integrated into all activities. This has also been the period in which increased attention has been paid to compliance with international environmental obligations, with the result that there has been a marked increase in international jurisprudence.
And, fourthly, it is only very recently within the past decade that issues of international environmental law have become a regular subject of international adjudication, and that international courts have begun to contribute to the definition and application of the subject.

The effectiveness of environmental law is largely determined by the nature of the problem at which the solution is directed. This is in large part due to the flexibility of international law making process, of which considerable advantage has been taken, and their ability to incorporate new concept and techniques. It has been pointed out, however that sustainable development evinces a strictly utilitarian, no preservationist view of environmental protection.

Thus, international law does not allow states to conduct activities within their territories, or in common spaces, without regard for the protection of global environment. This point is sometimes expressed by reference to the maxim sic uter tuo ut alienum non laedas or principles of good neighborliness, but the contribution of customary law in environmental matter is neither as modest nor as vacuous as these phrases might suggest. Two principles enjoy significant support:

i. a duty to prevent, reduce and control pollution and environmental harm, and

ii. a duty to co-operate in mitigating environmental risks and emergencies.

International environmental law adopts a ‘precautionary approach’. This interpretation of ‘no harm’ principle leaves open for determination the point at which preventive or precautionary measures must be taken a question which can only be answered by reference to the foreseeability or likelihood of harm and of its potential gravity.\textsuperscript{11}

4.2 Climate Change as a policy concern

Environmental law is of global significance. This is because environmental degradation is not confined to one or two nations. Environmental law cannot confine itself to the boarder of a nation or territory.

If there is anything “new” about the environmental challenges of the closing twentieth century it is that they, increasingly, are international, global and potentially more life-threatening than in the past Global pollution in the form of damage to the ozone layer and damage from global warming and sea-level rise due to greenhouse gases, is of particular concern.

\textsuperscript{11} S. Sivkumar, supra note 7, pp. 282-286
Global pollution presents a special challenge for several reasons. If its worst effects are realized, then some countries will experience catastrophic damage. No one country acting alone can do much to prevent or contain these impacts: only a coalition of governments worldwide can do this.\(^\text{12}\)

Scientific research on the environment is changing the basic conceptions of nature that underlie international politics. The idea that humans are experimenting with critical, global-scale environmental processes has achieved a political salience.\(^\text{13}\)

The uncertainties about climate change are both scientific and socio-behavioral. We do not know enough at the moment to say what the average global temperature and sea-level rise will be. Moreover, impacts depend and on the kinds of actions that governments will take. All this suggests, strongly, that there has to be both a great deal more scientific research and socio-economic research on climate change.\(^\text{14}\)

Global climate change poses unprecedented challenges to the international community, and in particular to international law. No longer is it possible to rely on traditional principles of international law. Likewise, the rules and remedies under the existing state responsibility regime increasingly look redundant, given the complexity of climate change as a policy challenge.\(^\text{15}\)

Increasing human population armed with advanced scientific technology is excessively exploiting and indiscriminately consuming natural resources which is exerting severe pressure on the natural resources unfortunately leading to negative effects on the ecosystem: ozone depletion, toxic pollution, erosion of biodiversity and thus, climate change and global warming.

Climate change involves the change in earth's atmospheric temperature because of emission of various pollutants and especially, carbon dioxide (CO\(_2\)). It is claimed that climate change would cause significant environmental problems, such as increased desertification, the flooding of small islands and other unforeseeable environmental disasters. Most scientists agree today that the earth's temperature has

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\(^{14}\) David Pearce, Anil Markandya, Edward B, Supra note 12, p. 16

\(^{15}\) Benjamin J Richardson, (et al), ‘Climate Law and Developing Countries’, UK: Edward Elgar Publishing Limited, 2009, p. 57
been affected in a discernible manner by various pollutants, but the extent of the change or whether it would bring global or regional detrimental effects is still severely contested.

The greenhouse effect, to which the climate change is attributed, is a natural phenomenon. It happens because naturally occurring greenhouse gases in the atmosphere absorb heat and then emit it back to the earth. As such, the phenomenon is beneficial because, without it, the earth could be a cold planet deprived of life as we know it. The problem is that the increase in the anthropogenic sources of greenhouse gases has destabilized the natural balance between the emissions of greenhouse gases and their removal by sinks (e.g., forests), thereby creating fears of climate change.\(^1\)

While global climate change originated as an environmental problem, it now impinges on every aspect of human life with implications for international economy, public health, social issues such as migration and loss of livelihood, and, ultimately, threatening international peace and security. Climate change is a global phenomenon virtually every state in the international community is a perpetrator as well as a victim of it. The accumulation of these gases in the atmosphere over a period of time is causing the climate to change.\(^2\)

Thus, Climate change epitomizes, perhaps as much as any other policy issue, people’s growing perception that the world itself is finite and indivisible, raising fundamental questions about how we govern ourselves as a global community.\(^3\)

The climate change regime is more-complex as there is some uncertainty about what climate change would involve and which countries it would adversely affect. Some countries or regions are to benefit from climate change, whereas others are to be losers. Furthermore, certain countries have come to contest the science behind climate change making the regulation of climate change even more complex and acrimonious.\(^4\)

Growing demands for policy action have prompted increasingly complex and sophisticated attempts to quantify the potential damage from climatic changes and the potential costs of policies to prevent them.\(^5\) Scientific debates about climate change have often treated global warming as analogous to other environmental issues.

\(^1\) Elli Lonka, supra note 9, pp. 356-357
\(^2\) Benjamin J Richardson, et al, supra note 15, pp. 37, 49-50
\(^3\) Clark A Miller and Paul N Edwards, supra note 13, p. 2
\(^4\) Elli Lonka, supra note 9, p 103
\(^5\) Clark A Miller and Paul N Edwards, supra note 13, p. 2
International cooperation to contain greenhouse effects to an “acceptable level” is vital and urgent. The urgency arises because of the nature of the risks if the worst outcome occurs; because increased warming and hence increased damage; because future adjustment is likely to be expensive; and because the only form of containment is through international cooperation which will be complex and difficult to secure. Global pollution problems underline the need for anticipatory policy.\(^\text{21}\)

But the climate regime is more complex than most cases so far treated by the epistemic communities approach. It remains unclear whether the extent of scientific agreement, even on core issues such as global warming’s extent, is sufficient to be called consensual knowledge. Multiple communities claim expertise, with different conclusions and different background commitments. Yet the epistemic communities approach typically takes consensus as the necessary condition of political influence, presuming that without it an expert group cannot speak with the united voice required for political authority. To study constitutional change in global environmental governance, we must thus attend to myriad institutional settings in which people construct knowledge about the earth’s climate and use it to inform their activities.\(^\text{22}\)

Environmental problems are not limited to local, regional and national boundaries as climate change has emerged not only as an important environmental issue but also as a significant political issue at national and global levels. Addressing the threat of climate change is a current global priority. There is broad consensus that climate change is best addressed in the context of sustainable development. Unless it is effectively dealt with, climate change will have a dramatic impact on the environment and on economic and social development.\(^\text{23}\)

Climate change can no longer be viewed as simply another in a laundry list of environmental issues; rather, it has become a key site in the global transformation of world order. In the three decades since the 1972 UN Conference on the Human Environment at Stockholm, states have constructed a suite of new international environmental regimes, with climate change taking center stage since the mid-1980s.

Climate change is also likely to exacerbate both natural disasters and potentially conflicts over natural resources. At a global level, climate change management has taken the form of an international convention, the UN Framework

\(^{21}\) David Pearce, Anil Markandya, Edward B, supra note 12, p. 18

\(^{22}\) Clark A Miller and Paul N Edwards, supra note 13, p. 5

Convention on Climate Change (UNFCCC). Most of the world’s nations signed this Convention and it came into force in 1994. To stabilize greenhouse gases (GHGs) concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

These regimes - ensembles of political and scientific institutions and networks, often centered on a formal treaty and developed to address particular issues such as global warming, ozone depletion, acid rain, or desertification have emerged as key focal points of contestation over the development of new norms and practices for making decisions of potentially worldwide reach. Evolving climate governance processes may feed back into other, existing global environmental regimes as well.24

Given the many complex challenges that climate change poses, responding to it will involve restructuring economies and ways of life, mobilizing new technologies, creating innovative systems of finance, and perhaps even new political arrangements and institutions.25

Thus, international law and institutions serve as the principal framework for international co-operation and collaboration between members of the international community in their efforts to protect the local, regional and global environment. At each level, the task becomes progressively more complex as new actors and interests are drawn into the legal process.

4.3 International response to Climate Change

The present state of the global environment poses a serious challenge to both national and international decision-makers and to the international public order system itself, it offers also an opportunity for, indeed holds out the promise of, unprecedented international co-operation. Successful responsive action, however, will depend on whether and how decision-makers act upon the special characteristics of today’s environmental crisis and its specific implication for the international legal system.26

In traditional international law, the state is the basic entity. It holds international rights and obligations. Some of those rights and obligations are created by treaty - express agreement over some matter with one or more other nation states.

24 Clark A Miller and Paul N Edwards, supra note 13, pp. 3-4
Such treaties create legal rules only among the Parties to the instrument and thus do not have a ‘legislative’ character for other states.

In the traditional order, new international rules were created in one of two ways by treaty or by the emergence of new rules of customary international law. Neither of these sources provided a direct and immediate way to legislate with respect to new international problems. Consensus was required to resolve new legal problems because treaties were binding only upon the states that ratified them.

Much of the recent development of international environmental law involves novel forms of law-creation, and the utilization of older forms to assist in that endeavor. Three such developments deserve special attention. They are the deduction of rules from accepted general principles of interstate behavior, the establishment of customary international law principles from widely (but not universally) accepted treaties, and the establishment of evolutionary treaty regimes.27

International regimes have been described as the convergence of expectations, patterns of behavior, and practice. Regimes have been defined as international arrangements characterized by implicit and explicit principles, norms, rules, and decision-making processes around which the expectations of different actors converge. Some regimes have been characterized as issue-focused, such as the regime for the protection of the ozone layer. The ozone regime is comprised of a convention and a number of protocols and has imposed specific regulations for the phasing out of ozone depleting substances. Issue-focused regimes include also the transboundary air pollution regime.

A global climate regime is a global framework that aims at regulating the interaction of human activity with the global climate system, to mitigate global climate change28 and seems at this point issue-focused. However, as the regime may expand to implement the clean development mechanism, joint implementation or tradable allowances, it may increase in complexity.29

Climate change poses an unprecedented and as yet still not fully understood threat to the global climate system upon which mankind depends; remedial action requires an extensive, and expensive, overhaul of industrial economies which are still heavily dependent on non-renewable carbon-based fossil fuels. For decades scientist

27 Fred L. Morrison, supra note 5, pp.115-117
29 Elli Lonka, supra note 9, pp. 61-62
have understood the chemical processes by which emissions of carbon dioxide and other gases might warm the planet through the so-called ‘greenhouse effect’, nevertheless it was not until the 1980s that international concern about anthropogenic impacts on the atmosphere through such emissions came to a head, and it was only in the last two decades of the 20th century that the United Nations took the first, somewhat faltering, steps towards recognizing and addressing the issue.\textsuperscript{30}

If international protection of environmental resources requires an increasingly high degree of adaptability or responsiveness of the legal system to rapid and frequent change, a traditional, ad hoc, treaty-based approach to international environmental standard-setting, is evidently ill suited to meet the task. And therefore the need to facilitate international environmental decision making of a less cumbersome and time-consuming nature without sacrificing at the same time on the objective of broad state adherence to adequate environmental standards, has prompted a restructuring of multilateral legislative processes, and informal review of international regulatory regimes with simplified amendment procedures.

The framework-cum-implementing protocols approach necessarily entails a significant degree of indeterminacy of the normative landscape thus being created: states tend to settle first broad policy outlines through the device of framework conventions and leave nettlesome details to be worked out in future protocols. This institutionalizes international lawmaking within the individual environmental context as defined by the framework convention.\textsuperscript{31}

The realization that there are environmental problems of global relevance, which can only be solved by the State Community as a whole, is relatively new. The essential criterion of the relevant treaties is that they oblige the States Parties to prohibit or to control certain activities within their territories while the measures to be enacted by the States are of essential importance not only for themselves but also for the State community as a whole. The difference between treaties for the protection of areas beyond national sovereignty on the one hand, and treaties dealing with global environmental problems on the other is two-fold: the latter oblige States to become active in their own territories, which means a substantial intervention into State


\textsuperscript{31}Gunther Handl, supra note 26, p. 62
sovereignty, whereas the former requires acts or omissions outside of the State territory and thus infringe to a lesser degree upon sovereignty.

Furthermore, with respect to environmental problems of global relevance, the obligation of each individual State does not primarily serve the coordination of competing uses or the preservation of an area beyond national jurisdiction of competing uses or the preservation of an area beyond national jurisdiction for future uses, but the interest of the state community to preserve the components of the world environment. Therefore such treaties differ essentially from other international agreements. Within treaties which aim to resolve global environmental problems and impose consequential obligations upon States in the interest of the States community, no direct benefit or competence exists for identifiable States which corresponds with these obligations. International treaties dealing with international problems of global relevance will be observed only if the States obliged accept that the components of the global environment in question are worth being protected, that they need protection, and that the burden on those States is reasonable.

Such treaties differ essentially from other international agreements within treaties which aim to resolve global environmental problems and impose consequential obligations upon states in the interest of the state community, no direct benefit or competence exists for identifiable states which correspond with these obligations. International treaties dealing with international problems of global environment in question are worth being protected, that they need protection, and that the burden on those states reasonable.32

The standards set by international agreements designed to protect components of the global environment differ. The objectives pursued by such agreements have been appropriately, albeit broadly, expressed. The Framework convention on climate change acknowledges that ‘the Earth’s climate is a common concern of mankind since climate is an essential condition that sustains life’. Although this global concern aspect has been mentioned in other international agreements on the protection of the environment, it has only been emphasized and made the focal point in the United Nations Educational, Scientific and Cultural Organization (UNESCO) Convention, the Convention on the Protection of Biological Diversity, the Convention for the Protection of the Ozone Layer and the Convention on Climate Change and the World

32 Rudiger Wolfrum, supra note 4, pp. 57 & 58
Charter for Nature, which was resolved by the UN general Assembly of 28th October 1982.

The first dilemma, faced by those who wanted a legal instrument to regulate climate change, was whether to adopt an umbrella legislative instrument - an equivalent to the UNCLOS - Law of the Atmosphere. The other approach was to create a legislative apparatus similar to the ozone regime. In the latter case, a framework convention would be followed by protocols that would increasingly toughen the commitments and impose more demanding timetables. Eventually, the second approach was endorsed because states were apprehensive of the long negotiating cycles suggested by the UNCLOS negotiating process.

The negotiating dynamics that surrounded the climate change regime were quite different from those that shaped the ozone negotiations. Scientific uncertainty with regard to climate change had shadowed the negotiations of the Climate Change regime.33

Awareness with regard to the climate change issue has been developing in international community since 1985. In 1988, governments took action by asking the World Health Organization (WHO) and the UNEP to establish an Intergovernmental Panel on Climate Change (IPCC). In 1990, the IPCC issued its first report that stated clearly that if states continue business as usual, the global temperature will raise in the next century by an average of 0.3 degrees C per decade a rate of change that has never been encountered before in human history. The report of the panel provided the scientific impetus for the adoption of the Climate Change Convention and the Kyoto protocol.

4.3.1 Various Conferences relating to Climate Change

Several conferences in the recent years have taken place, which have provided international policy framework to be considered when dealing with the science of the global climate change. A number of intergovernmental conferences focusing on climate change were held in the late 1980s and early 1990s. Together with increasing scientific evidence, these conferences helped to raise international concern about the issue. Participants included government policy-makers, environmentalists and scientists. The meetings addressed both scientific and policy issues and called for global action.

33 Elli Lonka, supra note - 9, pp. 357-358
The First World Climate Conference recognized climate change as a serious problem in 1979: This scientific gathering explored how climate change might affect human activities. It issued a declaration calling on the world’s governments “to foresee and prevent potential man-made changes in climate that might be adverse to the well-being of humanity”. It also endorsed plans to establish a World Climate Programme (WCP) under the joint responsibility of the World Meteorological Organization (WMO), the United Nations Environment Programme (UNEP), and the International Council of Scientific Unions (ICSU).34

International Conference on the Assessment of the role of CO₂ and other Green House Gases in climate variations and Associated impacts (Villach, Austria, October 9-15, 1985) and follow up workshops (Villach, Austria, September, 28, October 2, 1987 Bellagio, Italy, November 9-13, 1987): The Villach conference held with 29 countries recommended that the governments and inter-governmental organizations should take into account the results of the assessment made in their environmental programs, and should favor the increase of public information effects on the global change issues. This meet was in regard with the assessment of the presence of carbon dioxide in the atmosphere.

Conference on the changing Atmosphere: Implications for Global Security (Toronto, Canada, June 27-30, 1988): The conference was organized at the initiative of the Canadian government and gathered together more than 300 scientists and decision makers from 45 countries and international organizations. The conference called for urgent work on an “Action Plan for the Protection of the Atmosphere”. This Action Plan, complemented by national actions, had addressed the problems of climate warming, ozone layer depletion, long-range transport of toxic chemicals and acidification.

Resolution of the United Nations General Assembly on protection of Global Climate for Present and Future generations of the mankind. (Resolution 45/53 of December 1988 and 44/207 of December 1989): The resolution urged governments, intergovernmental and non-governmental organizations and scientific institutions to treat climate change as a priority issue, to undertake and promote specific, cooperative action oriented programs and research so as to increase understanding on all sources and causes of climate change including its regional aspects and specific time

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frame as well as the cause and effect relationship of human activities and climate and to contribute as appropriate, with human and financial resources to protect the global climate.

International Conference on Saving the Ozone Layer (London, UK, March 5-7, 1989): This conference was held at the initiative of the United Kingdom in association with UNEP, with the participation of 123 countries and the European Community. The conference was aimed at strengthening support for the Vienna Convention and the Montreal Protocol and at the examination of more radical proposals than were contained in those treaties. The conference was meant primarily as an awareness raising exercise, no negotiations, having taken place during the event.

International Conference on the Protection of the Global Atmosphere (The Hague, The Netherlands, March II, 1989): This conference held at the initiative of the French Prime Minister and co-sponsored by the French, Dutch, and the Norwegian governments, produced “The Hague Declaration” which called for the development within the UN framework of a new institutional authority, either by strengthening existing institutions or by creating new institutions. The declaration also called for the creation of an “Atmospheric Fund” to provide “fair and equitable assistance to compensate countries bearing and abnormal or special burden as a result of decisions taken to protect the atmosphere.”

First Meeting of the Parties to the Montreal Protocol on Substances that deplete the Ozone Layer (Helsinki, Finland, May 1-5, 1989): The conference issued a declaration of intent for the complete elimination of the production and use of chlorofluorocarbons (CFCs) the year 2000. The declaration also called for a transfer of technology and of financial aid to Third World countries to enable them to institute alternatives to CFCs.

Summit of the Group of Seven Industrialized Countries (Paris, France, July 14-16, 1989): By including in its final statement related to environmental issues, the Summit clearly expressed a strong interest in the environment, with particular attention being devoted to global climate change issues.

International Conference on Global Warming (Noordwijk, The Netherlands, November 6-7, 1989): The conference issued a declaration calling for a freeze in the CO₂ emissions as soon as possible and to be set at levels to be considered by IPCC and the Second World Climate Conference.

White House Conference on Science and Economics Research related to Global
Change (Washington, DC, USA, April 16-18, 1990): This conference, which was initiated by the US President, sought to add an integrating focus for international thought on global change, by introducing the concept of “Global Stewardship.” It also emphasized a new dimension of the international dialogue on global change: that economic analysis and research on broad global change policies and on the consequences of such policies must be integrated with the science of global change.

Conference on Action for a Common Future (Bergen, Norway, May 14-16, 1990): In this conference was prepared the “Bergen Ministerial Declaration of Sustainable Development in the Economic Commission for Europe Region” covering policies, objective, principles and commitments in support of sustainable development and with particular emphasis on the global aspects.

London Summit (London, UK, June 1990): This was basically an amendment of the Montreal Protocol and aimed at establishing a funding mechanism to assist the developing countries into the transition period. Developed countries agreed at London to take all practical steps to transfer technology to the developing countries.

Madrid Agreement on Antarctica (Madrid, Spain, October 5, 1991): A landmark agreement on Antarctica was signed by member nations of the Antarctica Treaty, which banned the exploitation for oil and other minerals on the icy continents to protect the eco-system, and also regulated the marine pollution and waste disposal. The agreement bans mining indefinitely and says this cannot be altered until at least 50 years have passed.  

4.3.2 Various Conventions

The development of international environmental law began with the creation of the UN and its specialized agencies in 1945. It was a period characterized by two features: international organizations at the regional and global level began to address environmental issues; and the range of environmental concerns addressed by international regulatory activity broadened to include a focus on the causes of pollution resulting from certain ultra-hazardous activities. During this period, the UN tried to put up in place a system for co-coordinating responses to international environmental issues where by regional and global conventions were adopted. 

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36 Whereas in the last century, the term convention was regularly employed for bilateral agreements, it is now generally used for formal multilateral treaties with a broad number of parties.
4.3.2.1 Stockholm Declaration, 1972

The Stockholm Conference was convened in December 1968 by the United Nations General Assembly and held in Stockholm on 5-16 June 1972 attended by 114 states and a large number of international institutions and non-governmental observers. The background and outcome of the Stockholm conference, is a turning point in the International Environmental Jurisprudence. This declaration lays down twenty six principles, not all of which directly address environmental issues. The creation of UNEP and the adoption of Principle 21 were the most significant achievements of the Stockholm Conference.

Principle 21 of the Stockholm Declaration on the human environment is important. It affirms both sovereign right of the state to exploit their own resources ‘pursuant to their environmental policies’ and their responsibilities to ensure that activities within their jurisdiction or control do not cause damage to environment of other states or area beyond the limits of national jurisdiction.

Principle 21 has remained as a highly influential statement in the subsequent development of law and practice in environmental matters, notably in United Nations Resolutions viz. in the UNEP principles, and in multilateral treaties. Its normative character is also recognized in various Articles of the 1982 UNCLOS. Thus the last 1970’s and 1980’s saw a rushing in of bilateral and multilateral environmental treaties into the international scenario. Of these, the most important in the array of environmental treaties is the Rio Declaration on Environment and Development adopted by the UNCED in June 1992.\(^{37}\)

4.3.2.2 Vienna Convention for the protection of the Ozone Layer (Vienna, Austria, March 22, 1985)

This convention was signed by 20 states and the EEC at a conference convened by the UNEP. The object of the convention was the protection of human health and the environment against adverse effect resulting or likely to result from human activities, which modify or are likely to modify the ozone layer. In 2009, the Vienna Convention became the first Convention of any kind to achieve universal ratification.

The Vienna Convention did not require countries to take concrete actions to control ozone depleting substances. Instead, in accordance with the provisions of the

\(^{37}\) S. Sivkumar, supra note 7, pp. 286-288
Convention, the countries of the world agreed the Montreal Protocol\textsuperscript{38} on Substances that Deplete the Ozone Layer under the Convention to advance that goal.\textsuperscript{39}

4.3.2.3 \textbf{Montreal Protocol} on substances that deplete the Ozone Layer (Montreal, Canada, Sept. 16, 1987)

This protocol signed by 24 of the 46 countries attending a conference in Montreal seeks to inhibit the production, consumption and trade of ozone-depleting compounds. The compounds are divided into two groups: Group I (certain CFSs) and Group II (specific halons) each subject to different limitations. The protocol also distinguishes between two groups of countries, the more developed with relatively high levels of consumption of the controlled ozone depleting substances, and the developing countries with relatively low levels of consumption.

Under the Montreal Protocol, 95\% of the production and consumption of all ozone-depleting substances have been phased-out. Global observation have verified that atmospheric levels of key ozone-depleting substances are going down and it is believed that with implementation of the Montreal Protocol’s provisions, the ozone layer should return to its pre-1980 levels by 2050 to 2075.\textsuperscript{40}

4.3.2.4 \textbf{Rio Declaration 1992}

The Rio Declaration is particularly important because of the wide spread of international support by which it indicates many of the existing or emerging principles of international environmental law. The Declaration can best be seen in part as a codification of the subject, and in this respect the conference has gone significantly beyond what could be achieved at Stockholm in 1972.\textsuperscript{41} The Rio declaration was based on principles of general rights and obligations on environment protection, initiated by heads of governments at the United Nations conference on Environment and Development.

\textsuperscript{38} A protocol, in the context of treaty law and practice, has the same legal characteristics as a treaty. The term protocol is often used to describe agreements of a less formal nature than those entitled treaty or convention. Generally, a protocol amends, supplements or clarifies a multilateral treaty. A protocol is normally open to participation by the parties to the parent agreement.


\textsuperscript{41} S. Sivkumar, supra note 7, p. 288
During the Earth Summit, success in a limited form was seen in the different treaties signed by the attending nations. Two key treaties were signed by over 150 nations the treaty on bio diversity and climate change.42

Principle 2 of Rio Declaration reiterates the wording of Principle 21 of the earlier Stockholm Declaration. Principle 10 accords individuals the right to appropriate access to environmental information and participation in decision-making in judicial and administrative proceedings, precedents, which have significance in the development of environmental law. It helps to bring forth the main principles of international environmental law which enjoy significant support i.e. a duty to prevent, reduce and control pollution and environmental harm and a duty to cooperate in mitigating environmental risks and emergencies. Thus, now the regime of international law has changed from punitive to preventive. The principles of ‘let the polluter pay’ and the principle of “equal access and discrimination” now stand well established through these conventions and are significant in the development of environmental law.43

Principle 7 of the Rio Declaration on Environment and Development provides that:

“States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth’s ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit to sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.”44

The publicity surrounding the discovery and mapping of the growing ‘ozone hole’ over the Southern Polar region during the early 1980s, together with the swift and successful negotiation of the 1985 Vienna Convention for the Protection of the Ozone Layer followed by its 1987 Montreal Protocol on Substances that Deplete the Ozone Layer focused attention on the much wider and more complex issue of the impacts of greenhouse gases on the global atmospheric system.

42 P. R. Trivedi, K Chery Sudharshan, supra note 35, pp. 36-41.
43 S. Sivkumar, supra note 7, pp. 288-289
By the late 1980s climate change was already firmly on the international agenda, and in 1988 the UN General Assembly (UNGA) passed Resolution 43/53 on the Protection of the Global Climate for Present and Future Generations of Mankind.

It declared the issue to be one of ‘common concern to mankind’ and endorsed the action of the UNEP and the WMO in jointly establishing IPCC an expert body that would assess scientific information on climate change. The Panel was to ‘provide internationally coordinated scientific assessments of the magnitude, timing and potential environmental and socioeconomic impacts of climate change and realistic response strategies’\(^{45}\) and was given a mandate to assess the state of existing knowledge about the climate system and climate change; the environmental, economic, and social impacts of climate change; and the possible response strategies.

Approved after a painstaking peer review process, the First Assessment Report by IPCC in 1990 confirmed the scientific evidence for climate change. This had a powerful effect on both policy-makers and the general public and provided the basis for negotiations on the Climate Change Convention. As a reaction to the concerns raised in the IPCC’s First Assessment Report the UN General Assembly established the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change. Two years later, in 1990, UNGA Resolution 45/212 established an Intergovernmental Negotiating Committee to develop a legal instrument on climate change.

The Intergovernmental Negotiating Committee (INC) for a Framework Convention on Climate Change (FCCC) met for five sessions between February 1991 and May 1992. Facing a strict deadline - the June 1992 Rio “Earth Summit” - negotiators from 150 countries finalized the Convention in just 15 months. It was adopted in New York on 9 May 1992.\(^{46}\)

The outcome of a further two years of strenuous negotiations was the 1992 UNFCCC. The UNFCCC was concluded in New York on 9 May 1992. It was opened for signature in June 1992 as a part of the UN Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil. It now has 192 Parties.\(^{47}\)

In December 1990, the UN General Assembly approved the start of treaty negotiations. The Framework Climate Change Convention was the result of the

\(^{45}\) Supra note 30
\(^{46}\) Supra note 34
\(^{47}\) Supra note 30
negotiating wrangling among states in the Rio Declaration. The convention, an outcome of efforts to include, in a single document, diverse outlooks and interests of states, is an opaque international instrument.\textsuperscript{48}

4.4 The United Nations Framework Convention on Climate Change

The evolution of international climate change law in terms of the law began in the 1980s with the adoption by the General Assembly of the United Nations (UN) of a resolution entitled, Protection of the Global Climate for Present and future Generations of Mankind. The resolution called on countries of the United Nations Environment Program and the World Meteorological Organization to establish the IPCC. The negotiation of the UNFCCC took place. In June 1992 in Rio de Janeiro, Brazil, and was presented to the nations attending the UN Conference on Environment and Development for signature. Thus was born the convention that has served as the point of formation of UN treaties and polices on climate change issues ever since.\textsuperscript{49}

The United Nations Framework Convention on Climate Change is the foundation of global efforts to combat global warming. Opened for signature in 1992, it was signed by 154 states (plus the EC) at Rio de Janeiro; twenty years after the 1972 Stockholm Declaration first laid the foundations of contemporary environmental policy.\textsuperscript{50}

Thus, the UNFCCC is an international environmental treaty produced at the Rio Earth Summit in 1992. It was opened for signature on May 9, 1992, after an Intergovernmental Negotiating Committee produced the text of the Framework Convention as a report following its meeting in New York from 30\textsuperscript{th} April to 9\textsuperscript{th} May 1992. It entered into force on 21\textsuperscript{st} March 1994.

The UNFCCC acknowledged that human Activities are increasing the concentration of GHGs in the atmosphere and that this would lead to increasing warming of the Earth and to climate change. These changes would then lead to adverse effects on natural ecosystems and human beings.\textsuperscript{51}

The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of GHG concentrations in the

\textsuperscript{48} Elli Lonka, \textit{supra} note 9, pp. 358-359
\textsuperscript{49} Scott D. Deatherage, “Carbon Trading Law and Practice”, Oxford University Press, 2011, p. 41
\textsuperscript{50} \textit{Supra} note 34
\textsuperscript{51} Scott D. Deatherage, \textit{supra} note 49, p. 41
atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.  

Article 3 then goes on to enumerate the principles by which the Parties should be guided in their actions to achieve this objective. These include a number of the innovative principles set out in the 1992 Rio Declaration, notably the precautionary principle, and the principle of inter-generational equity. Preeminent however is the new principle of ‘common but differentiated responsibility’ discussed in more detail below. The Convention also recognizes a number of other principles such as the special needs of developing country Parties and of those ‘that would have to bear a disproportionate or abnormal burden under the Convention’, as well as the right of all Parties to promote sustainable development and the need to promote ‘a supportive and open international economic system’.  

Parties to the UNFCCC are expected to “take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects...”  

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52 Article 2 of UNFCCC  
53 Article 3: To achieve the objective of the Convention and to implement its provisions, the Parties shall be guided, inter alia, by the following:  
1. The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.  
2. The specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, and of those Parties, especially developing country Parties, that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration.  
3. The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties.  
4. The Parties have a right to, and should, promote sustainable development. Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change.  
5. The Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties, particularly developing country Parties, thus enabling them better to address the problems of climate change. Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.  
54 Supra note 30
effects” (Article 3.3). Parties have “common but differentiated responsibilities” based on their national circumstances (Articles 3.1 and 4.1).

Each Party is committed to the

i. Gathering and sharing information on GHG emissions, national policies and best practices;

ii. Formulating strategies for addressing GHG emissions and adapting to the expected impacts;

iii. Cooperating in preparing for adaptation to the impact of climate change.

The UNFCCC differentiates between three different groups of Parties:

a. Annex I comprises those countries that were OECD members in 1992 as well as countries with economies in transition (EIT);

b. Annex II comprises the OECD members of Annex I;

c. Non-Annex I Parties are primarily the developing nations.\(^55\)

The UNFCCC recognizes the legitimate need of developing countries for sustained economic growth and poverty alleviation. Article 3.1 of the UNFCCC mentions that Parties to the Convention should protect the climate change system for the benefit of present and future generations of human kind on the basis of equity and in accordance with their “common but differentiated responsibilities” and respective capabilities.\(^56\) It is noted in the Preamble of the UNFCCC that the largest share of historical and current global emissions of greenhouse gases has originated in developed countries, that per capita emissions in developing countries are still relatively low and that the share of global emissions originating in developing countries will grow to meet their social and development needs. The UNFCCC promotes and reviews the implementation of the Convention through decisions taken at annually held meetings of the Conference of Parties (CoP). It also gave a “soft target” for industrialized countries (Annex I Parties) to return to 1990 levels of GHG emissions by 2000. All major countries, including US, EU, India, China, have ratified the Convention.\(^57\)


In terms of actual commitments, Article 4 of the Convention discusses what the nations of the UN are supposed to accomplish. One of the most important is that developed countries are to adopt national polices and take measure to mitigate climate change through the limitations of GHG emissions and protecting GHG sinks and reservoirs.\textsuperscript{58}

The generally hortatory obligations of all Parties are set out in Article 4(1) but the full significance of the common but differentiated obligations emerges in Article 4(2) where the developed countries and countries with economies in transition (which are listed in Annex I) undertake to adopt policies and measures which will ‘demonstrate that developed countries are taking the lead in modifying longer term trends in anthropogenic emissions consistent with the objective of the Convention.’ \textsuperscript{59}

\textsuperscript{58} Scott D. Deatherage, \textit{supra} note 49, p. 42
\textsuperscript{59} Article 4(1): All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:

(a) Develop, periodically update, publish and make available to the Conference of the Parties, in accordance with Article 12, national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the Conference of the Parties;

(b) Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change;

(c) Promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors;

(d) Promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol, including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems;

(e) Cooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods;

(f) Take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change;

(g) Promote and cooperate in scientific, technological, technical, socio-economic and other research, systematic observation and development of data archives related to the climate system and intended to further the understanding and to reduce or eliminate the remaining uncertainties regarding the causes, effects, magnitude and timing of climate change and the economic and social consequences of various response strategies;

(h) Promote and cooperate in the full, open and prompt exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate system and climate change, and to the economic and social consequences of various response strategies;

(i) Promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process, including that of non-governmental organizations; and
While a number of particular factors are listed, the Article does recognize that ‘a return by the end of the present decade to earlier levels of anthropogenic emissions would contribute to such modification.’\textsuperscript{60} The Convention does not however provide

\textsuperscript{60}Article 4(2): The developed country Parties and other Parties included in Annex I commit themselves specifically as provided for in the following:

(a) Each of these Parties shall adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs. These policies and measures will demonstrate that developed countries are taking the lead in modifying longer-term trends in anthropogenic emissions consistent with the objective of the Convention, recognizing that the return by the end of the present decade to earlier levels of anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal Protocol would contribute to such modification, and taking into account the differences in these Parties' starting points and approaches, economic structures and resource bases, the need to maintain strong and sustainable economic growth, available technologies and other individual circumstances, as well as the need for equitable and appropriate contributions by each of these Parties to the global effort regarding that objective. These Parties may implement such policies and measures jointly with other Parties and may assist other Parties in contributing to the achievement of the objective of the Convention and, in particular, that of this subparagraph;

(b) In order to promote progress to this end, each of these Parties shall communicate, within six months of the entry into force of the Convention for it and periodically thereafter, and in accordance with Article 12, detailed information on its policies and measures referred to in subparagraph (a) above, as well as on its resulting projected anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol for the period referred to in subparagraph (a), with the aim of returning individually or jointly to their 1990 levels these anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal Protocol. This information will be reviewed by the Conference of the Parties, at its first session and periodically thereafter, in accordance with Article 7;

(c) Calculations of emissions by sources and removals by sinks of greenhouse gases for the purposes of subparagraph (b) above should take into account the best available scientific knowledge, including of the effective capacity of sinks and the respective contributions of such gases to climate change. The Conference of the Parties shall consider and agree on methodologies for these calculations at its first session and review them regularly thereafter;

(d) The Conference of the Parties shall, at its first session, review the adequacy of subparagraphs (a) and (b) above. Such review shall be carried out in the light of the best available scientific information and assessment on climate change and its impacts, as well as relevant technical, social and economic information. Based on this review, the Conference of the Parties shall take appropriate action, which may include the adoption of amendments to the commitments in subparagraphs (a) and (b) above. The Conference of the Parties, at its first session, shall also take decisions regarding criteria for joint implementation as indicated in subparagraph (a) above. A second review of subparagraphs (a) and (b) shall take place not later than 31 December 1998, and thereafter at regular intervals determined by the Conference of the Parties, until the objective of the Convention is met;

(e) Each of these Parties shall:

i. Coordinate as appropriate with other such Parties, relevant economic and administrative instruments developed to achieve the objective of the Convention; and

ii. Identify and periodically review its own policies and practices which encourage activities that lead to greater levels of anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol than would otherwise occur;

(f) The Conference of the Parties shall review, not later than 31 December 1998, available information with a view to taking decisions regarding such amendments to the lists in Annexes I and II as may be appropriate, with the approval of the Party concerned;

(g) Any Party not included in Annex I may, in its instrument of ratification, acceptance, approval or accession, or at any time thereafter, notify the Depositary that it intends to be bound by subparagraphs (a) and (b) above. The Depositary shall inform the other signatories and Parties of any such notification.
any modality by which this return to ‘earlier’ levels can be made nor indeed does it indicate which particular earlier levels should be used as the benchmark. Nevertheless, Article 4(3) does provide an unequivocal obligation that the developed countries listed in Annex II shall provide ‘new and additional financial resources’ to meet the ‘agreed full costs’ incurred by developing countries in meeting their communication obligations under Article 12 and to meet the ‘agreed full incremental costs’ in implementing the measures envisaged in Article 4(1) and which are agreed between the developing country Party and the ‘entity or entities referred to in Article 11’ (i.e., the Financial Mechanism).\(^{61}\)

The Convention puts the onus on developed countries to lead the way under Article 4(2). The idea is that, as they are the source of most past and current GHG emissions, industrialized countries are expected to do the most to cut emissions on home ground. They are called Annex I countries and belong to the Organization for Economic Cooperation and Development (OECD). They include 12 countries with “economies in transition” from Central and Eastern Europe. Industrialized nations agree under the Convention to support Climate Change activities in developing countries by providing financial support for action on Climate Change. The Convention takes this into consideration by accepting that the share of GHG emissions produced by developing nations will grow in the coming years. Nonetheless, in the interests of fulfilling its ultimate goal, it seeks to help such countries limit emissions in ways that will not hinder their economic progress.\(^{62}\)

Thus, industrialized countries undertake several specific commitments. Most members of the OECD plus the states of Central and Eastern Europe ñ known collectively as Annex I countries ñ committed themselves to adopting policies and measures aimed at returning their greenhouse gas emissions to 1990 levels by the year 2000 (emissions targets for the post-2000 period are addressed by the Kyoto Protocol). They must also submit national communications on a regular basis.

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\(^{61}\) Article 4(3): The developed country Parties and other developed Parties included in Annex II shall provide new and additional financial resources to meet the agreed full costs incurred by developing country Parties in complying with their obligations under Article 12, paragraph 1. They shall also provide such financial resources, including for the transfer of technology, needed by the developing country Parties to meet the agreed full incremental costs of implementing measures that are covered by paragraph 1 of this Article and that are agreed between a developing country Party and the international entity or entities referred to in Article 11, in accordance with that Article. The implementation of these commitments shall take into account the need for adequacy and predictability in the flow of funds and the importance of appropriate burden sharing among the developed country Parties.

\(^{62}\) Available at http://unfccc.int/essential_background/convention/items/6036.php accessed on 4/5/2014
detailing their climate change strategies. Several states may together adopt a joint emissions target. The countries in transition to a market economy are granted a certain degree of flexibility in implementing their commitments.

The richest countries shall provide “new and additional financial resources” and facilitate technology transfer. These so-called Annex II countries (essentially the OECD) will fund the agreed full cost incurred by developing countries for Climate Change submitting their national communications. These funds must be new and additional rather than redirected from existing development aid funds. Annex II Parties will also help finance certain other Convention-related projects, and they will promote and finance the transfer of, or access to, environmentally sound technologies, particularly for developing country Parties. The Convention recognizes that the extent to which developing country Parties implement their commitments will depend on financial and technical assistance from the developed countries.63

Under the current UNFCCC framework, developed countries report their emissions annually and developing countries are supposed to report theirs every six years. Emissions inventories in developed countries are generally agreed to be strong, and are accepted as the basis for international emissions trading (in which errors in emissions accounting would result in large financial transfers). Reporting from developing countries is widely considered to be much weaker, and the six-year reporting requirement is often violated. The exceptions are Clean Development Mechanism (CDM) projects, which are carefully monitored to determine whether promised emissions reductions are actually being achieved; here, monitoring is widely agreed to be strong.64

The Annex II countries also undertake to assist countries particularly vulnerable to the impacts of climate change in meeting the costs of adaptation to those adverse effects and to take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other parties, particularly developing countries, to enable them to implement the provisions of the Convention.

However Article 4(7) goes even further in imposing what might be called ‘blanket’ implementation conditionality. It provides that: ‘The extent to which

63 Supra note 34
developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed Country Parties of their commitments under the Convention relating to financial resources and transfer of technology.  

The Convention itself sets no mandatory limits on greenhouse gas emissions for individual countries and contains no enforcement mechanisms. In that sense, the Convention is considered legally non-binding. The Convention also does not provide a list of the GHGs that are to be regulated. It only refers to carbon dioxide of which there is the greatest quantity of all GHGs and “other greenhouse gases not controlled by the Montreal Protocol”. The Montreal Protocol regulates those GHGs that also contribute to the depletion of the ozone layer, for example CFCs.

Yet both the developed and developing countries accept a number of general commitments to develop and submit “national communications” containing inventories of greenhouse gas emissions by source and greenhouse gas removals by “sinks”. They will adopt national programmes for mitigating climate change and develop strategies for adapting to its impacts. They will also promote technology transfer and the sustainable management, conservation, and enhancement of greenhouse gas sinks and reservoirs (such as forests and oceans). In addition, the Parties will take climate change into account in their relevant social, economic, and environmental policies; cooperate in scientific, technical, and educational matters; and promote education, public awareness, and the exchange of information related to climate change.

Thus, the UNFCCC aims at enabling economic development in a sustainable manner, recognizing that the goal of sustainable social and economic development will entail a growth in energy consumption, and linking this to climate change rules that provide possibilities for achieving greater energy efficiency and for controlling greenhouse gas emissions.

As climate change is a complex, daunting problem it requires a high degree of international cooperation for any effective solution as the Convention itself sets no mandatory limits on GHG emissions for individual countries and contains no enforcement mechanisms. Responding to the challenges posed by climate change has

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65 Supra note 30
66 Available at http://nrg4sd.org/sites/default/files/default/files/content/public/29climatechange/background/general/rough_guide_unfccc_and_kyoto_protocol_09052011.pdf accessed on 14/5/ 2014
67 Supra note 34
given rise to the issue of how to distribute the burden of reducing GHG emissions among generations and countries with varying development contexts and capabilities. The Convention addresses these concerns by laying down principles agreed upon by the Parties, which are to be used by Parties in guiding their efforts to achieve the object and purpose of the Convention.

Furthermore, the UNFCCC gives recognition to other principles such as the special needs of developing countries, and also that Parties have a ‘right to, and should promote sustainable development’.

4.4.1 The Convention sets out some guiding principles

One peculiarity of international environmental law is that it has developed a set of principles. Emerging mainly from ‘soft-law instruments’, such as declarations and international statements, certain principles are starting to assert certain persuasive force. Such principles may help to resolve conflicts related to sustainable development, and support the balanced integration of laws and policies at the intersection of international environmental, social and economic law.

Established Norms of International Environmental Law are general legal principles that are widely accepted. This acceptance is evidenced in a number of ways, such as international agreements, national legislation, domestic and international judicial decisions and scholarly writing. The principles expressing the fundamentals of a legal order play a very important role in the creation, development and application of law in general. The principles are superior to ordinary rules because the rules should be based on these principles. Some of the leading norms in the field of international environmental law relating to environment also reflect in Climate Change Regime.

Certain principles of general or specific application have appeared in operational parts of international environmental agreements. For example, Article 3 of the convention on climate change 1992 lists principles which are meant to guide the parties’ actions. Such principles in operative parts of international agreements “embody legal standards, but the standards they contain are more general than

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68 Rudiger Wolfrum, supra note 4, p. 6
commitments and not specify particular actions”. As in Climate Change Regime, the precautionary principle says that the lack of full scientific certainty should not be used as an excuse to postpone action when there is a threat of serious or irreversible damage. The principle of the common but differentiated responsibilities of states assigns the lead in combating climate change to developed countries.

There are various other principles which deal with the special needs of developing countries in combating climate change and in promoting sustainable development. Thus, Article 3 of the Convention sets out a number of ‘Principles’ to guide the parties in achieving the objective and implementing the provisions.

4.4.1.1 The duty of States to ensure sustainable use of natural resources

The protection, preservation and enhancement of the natural environment, particularly the proper management of climate system, biological diversity and fauna and flora of the Earth, are the common concern of humankind. The resources of outer space and celestial bodies and of the sea-bed, ocean floor and subsoil thereof beyond the limits of national jurisdiction are the common heritage of humankind.

The duty of states not to cause damage to the territory of another state is derived from the sovereignty of states. It is a well-established principle that, in accordance with international law, all States have the sovereign right to manage their own natural resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause significant damage to the environment of other States or of areas beyond the limits of national jurisdiction.

The responsibility or obligation, not to cause damage to the environment of other States or of areas beyond the limits of National jurisdiction is one of the fundamental objective for the development of international environmental law. According to this customary principle, the States are required by international law to

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71 Fred L. Morrison and Rudiger Wolfrum, supra note 1, pp. 6 & 7
72 Supra note 63
73 Supra note 69
74 Elli Lonka, supra note 9, p. 50
75 States have sovereign rights over their natural resources. However, these rights are not absolute. Their sovereignty is restricted by a second objective well recognized in international environmental law, namely, that States must not cause irreparable damage to the territories of other states. There are often practical challenges involved in demonstrating the links of ‘causality’ between an action, and irreparable damage to the global environment, or the environment of another state. This negative obligation (‘not to cause damage’), when applied to the management of shared natural resources, has evolved into a positive obligation, namely, ‘to ensure that natural resources are used in a sustainable manner.’
76 Supra note 69
take adequate steps to control and regulate sources of serious global environmental pollution or transboundary harm, within their territory or subject to their jurisdiction or control do not cause damage to the environment of other States or to areas beyond the limits of National Jurisdiction.

The responsibility of States not to cause environmental damage in areas outside their jurisdiction pre-dates the Stockholm Conference and is related to the obligation of all States to protect within the territory the rights of other States, in particular their right to integrity and inviolability in peace and war.\textsuperscript{77} The 1992 Rio Declaration, in Principle 2, affirms the responsibility not to cause damage to the environment of other States or areas beyond the limits of national jurisdiction, and declares that the States have “the sovereign right to exploit their own resources pursuant to their own environmental and development policies.”

The importance of “protecting and managing the natural resource base of economic and social development” was given very high priority in the 2002 World Summit on Sustainable Development, as the focus of Chapter IV of the Johannesburg Plan of Implementation.

As an example of how this principle is reflected in an international treaty on sustainable development, the Preamble to the 1992 UN Framework Convention on Climate Change reaffirms “the principle of sovereignty of States in international cooperation to address climate change,” and applies this concept in Article 3(4) which states that The Parties have a right to, and should, promote sustainable development. Thus, Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change.”\textsuperscript{78}

4.4.1.2 The principle of equity

States are not equal in real terms. States possess different degrees of power and resources. The “elite of states”\textsuperscript{79} is often able to induce concessions from other

\textsuperscript{77} Dr. P Ishwara Bhat and Sri Bhat Sairam, supra note 70, p. 3
\textsuperscript{78} Supra note 69
\textsuperscript{79} In political science and sociology, elite theory is a theory of the state which seeks to describe and explain the power relationships in contemporary society. The theory posits that a small minority, consisting of members of the economic elite and policy-planning networks, holds the most power and that this power is independent of a state's democratic elections process. Through positions in corporations or on corporate boards, and influence over the policy-planning networks through financial support of foundations or positions with think tanks or policy-discussion groups, members of the
states. In International law the concept of equity has been used in legal instruments to achieve corrective and distributive outcomes. Corrective equity is often articulated in agreements that give preferential treatment to developing countries to correct imbalances that come from the fact that they are weaker members of the international community.

A common view of international environmental law is as a device to manage or, for optimists, to resolve environmental problems. As the law has evolved from Stockholm to the World Summit on Sustainable Development (WSSD), however, distributional concerns are becoming more vocal. Distributional issues have been always implicit in international environmental instruments. The WSSD brought distributional issues to the limelight as it specifically addressed problems pertinent to developing countries, such as poverty, sanitation, disease, and lack of drinking water.  

The principle of equity is difficult to pin down. Some commentators have viewed equity as a defining concept of international law. Other commentators have argued that equity considerations introduce an especially subjective element in the interpretation of international law. To most people, equity would mean a fifty-fifty allocation of a resource; to others, that those with priority in use must be protected; to still others, equitable allocation must be based on needs independent of the extent to which a resource is located within national boundaries. The application of equity in the different regions of the world has not been the same. The interpretation of equity depends heavily on the dynamics of interrelationships among countries that happen to share a resource. Equity frequently lies in the eyes of the beholder, especially if that beholder is a relatively more powerful state that refuses to compromise.

The concept of “equity” is fundamental in Law. However, pertaining to its use in international environmental law and, in particular in the use of shared natural resources or common property- its contents are not clear. The “equitable” utilization of resources entails a balancing of interests and taking into account of all relevant factors. What these factors are and how they can be balanced depends entirely on the context of each case.

“elite” are able to exert significant power over the policy decisions of corporations and governments. In the context of climate regime it refers to the developed nations.

80 Elli Lonka, supra note 9, pp. 68-69
81 ibid, p. 53
In relation to the allocation of shared natural resources, equity is likely to play an important role. The Preamble to the 1987 Montreal Protocol reflects the aim of controlling ‘equitably total global emissions of substances that deplete the ozone layer’, an aim usually translated into specific obligations through the process of intergovernmental negotiations - as reflected in the 1990 & 1992 Adjustments and Amendments to the 1987 Montreal Protocol. The 1992 Climate Change Convention will require the equitable allocation of emission rights and the Biodiversity Convention will require the determination of what constitutes an equitable sharing of the benefits arising out of the use of genetic resources.82

The principle of equity is central to the attainment of sustainable development. It refers to both inter-generational equity (the rights of future generations to enjoy a fair level of the common patrimony) and intra-generational equity (the rights of all peoples within the current generation of fair access to the current generation’s entitlement to the Earth’s natural resources).83

Equity is a key principle of sustainable development law, consistently reflected in international instruments in the fields of development, human rights, economic and environmental law. Many of the references to equity in international instruments on environment and development are influenced by the definition of ‘sustainable development’ provided by the World Commission on Environment and Development in the report84, Our Common Future.

Equity also has an inter-generational dimension, in that States and other actors have an obligation to take into account the long-term impact of all activities on future generations of humankind.85

Intergenerational Equity is among the newest norms of international environmental law. It can best be understood not as much as a principle, but rather as an argument in favor of sustainable economic development and natural resource use. If present generation continues to consume and deplete resources at unsustainable

82 Dr. P Ishwara Bhat and Sri Bhat Sairam, supra note 70, p. 12
83 The present generation has a right to use and enjoy the resources of the Earth but is under an obligation to take into account the long-term impact of its activities and to sustain the resource base and the global environment for the benefit of future generations of humankind. Benefit in this context is to be understood in its broadest meaning as including, inter alia, economic, environmental, social and intrinsic benefit. The right to development must be implemented so as to meet developmental and environmental needs of present and future generations in a sustainable and equitable manner.
84 “Many present efforts to guard and maintain human progress, to meet human needs, and to realize human ambitions are simply unsustainable – in both the rich and poor nations.
85 Supra note 69
rates, future generations will suffer the environmental; (and economic) consequences. It is our children and grandchildren who will be left without forest (and their carbon retention capacities), without vital and productive agricultural land and without water suitable for drinking or for sustaining cultivation or aquatic life.

Intergenerational equity, as employed in current international instruments, contains two distinct components regarding the utilization of resources. The first calls for fairness in the utilization of resources between human generations past, present and future. It requires attaining a balance between meeting consumptive demands of existing societies and ensuring that adequate resources are available for future generations to meet their needs. Striking a balance between current consumption and foregoing use of resources or devoting resources for investment and thus for future generations has been a consideration for all societies.86

There is no doubt that some kind of responsibility towards future generations exists. This is increasingly reflected in the number of highly significant international agreements and treaties. As one example of how this principle is reflected in an international treaty on sustainable development,87

Under Article 3 of the UNFCCC the principle of Intergenerational Equity provides that ‘the Parties should protect the climate system for the benefit of present and future generations of humankind on the basis of equity and common but differentiated responsibilities and respective capabilities’. 4.4.1.3 Principle of the common but differentiated responsibilities

The principle of common but differentiated responsibility (CBDR) is of most recent origin. It has been formulated by the UN Conference on Environment and Development, 1992. Its basis lies in the application of equity as a Grundnorm of international law.88

The principle of common but differentiated responsibility evolved from the notion of the common heritage of mankind and is a particular manifestation of general principles of equity in international law. This principle recognizes historical differences in the contributions of developed and developing States to global environmental problems, and addresses their respective economic and technical capacity to tackle these problems. Clearly, despite their common responsibilities,

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86 Dr. P Ishwara Bhat and Sri Bhat Sairam, supra note 70, pp. 35-36
87 Supra note 69
88 Rudiger Wolfrum, supra note 4, p. 24
important differences exist between the stated responsibilities of developed and developing countries.

The principle of common but differentiated responsibility includes two fundamental elements. The first concerns the common responsibility of States for the protection of the environment, or parts of it, at the national, regional and global levels. The second concerns the need to take into account the different circumstances, particularly in relation to each State’s contribution to the evolution of a particular problem and its ability to prevent, reduce and control the threat. In practical terms, the application of the principle has at least two consequences. First, it entitles and may require all concerned States to participate in international response measures aimed at addressing environmental problems. Second, it leads to environmental standards that impose differing obligations on States.\(^9\)

The principle of common but differentiated responsibilities is a possible articulation of the concept of equity. Countries have differentiated responsibilities with regard to environmental protection because not every country has contributed to the same extent to environmental degradation and because not all countries have the same resources to devote to environmental problems. The principle of common but differentiated responsibilities has found apt articulation in the climate change and ozone protection conventions in which it is explicitly provided that developed countries should provide additional funding to developing countries in order to ensure the implementation of these treaties.\(^9\)

The 1992 Rio, Earth Summit articulated the norm of common but different responsibility. In both the Climate Change Convention and CBD, parties have directly acknowledged that the environmental issue at hand is a common concern of human kind. The two basic assumptions implicit on the common concern concept are:

i. That States should not cause harm with regard to issue of common concern, and

ii. That they share the responsibility for addressing these common concerns.\(^9\)

The Rio Declaration was the first international instrument specifically to incorporate the CBDR principle. Principle 7 states, in part:

\(^{89}\) Supra note 69

\(^{90}\) Ellin Lonka, supra note 9, p. 54

\(^{91}\) Dr. P Ishwara Bhat and Sri Bhat Sairam, supra note – 70, p. 14
In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.\textsuperscript{92}

The first time the CBDR principle was formally applied was in the Vienna Convention for the Protection of the Ozone Layer of 1985, although the treaty itself does not mention the principle specifically. It merely refers to the need to take into account ‘the circumstances and particular requirements of developing countries’. The Montreal Protocol, while also not specifically referring to the CBDR principle, contains an elaborate set of provisions giving effect to it. A special provision is required to meet the needs of developing countries for these substances.

The first binding environmental instrument explicitly to incorporate the CBDR principle is the UNFCCC. Both the preamble and Article 3 refer to it. According to Article 3:

- The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, developed country Parties should take the lead in combating climate change and the adverse effects thereof.

Thus, Article 3 places a special responsibility on the global North. It also requires in Article 3.2 that: ‘the specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, and of those Parties, especially developing country Parties, that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration’.\textsuperscript{93}

The principles of equity and common but differentiated responsibilities and respective capabilities is reflected in the general acceptance by developed countries of their greater historical contribution to the accumulation of GHG emissions, in addition to their relatively greater resource capacity to develop and take remedial action. Accordingly, the developed country Parties should take the lead in combating climate

\textsuperscript{92}States shall co-operate in a spirit of global partnership to conserve, protect and restore the health and integrity of the earth’s ecosystem.

\textsuperscript{93}Benjamin J Richardson (et, al), supra note 15, pp. 40-41
change and the adverse effects thereof. This leadership principle is reflected in the additional obligations imposed on Annex I countries.\(^{94}\)

It is also enshrined in Article 10, which states “All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, without introducing any new commitments for Parties not included in Annex I, but reaffirming existing commitments under Article 4, paragraph 1, of the Convention, and continuing to advance the implementation of these commitments in order to achieve sustainable development, taking into account Article 4, paragraphs 3, 5 and 7, of the Convention, to cooperate in scientific and technical research and promote the maintenance and the development of systematic observation systems and development of data archives to reduce uncertainties related to the climate system, the adverse impacts of climate change and the economic and social consequences of various response strategies, and promote the development and strengthening of endogenous capacities and capabilities to participate in international and intergovernmental efforts, programmes and networks on research and systematic observation, taking into account Article 5 of the Convention;” To implement the principle of differentiated responsibility, one important mechanism is establishment of international financing for international treaty implementation, such as the Global Environmental Facility, which supports activities of developing countries to comply with the UNFCCC, the UN Convention on Biological Diversity and the UN Convention to Combat Desertification. These mechanisms provide financial grants for implementing sustainable development projects and developing environmentally sound technology.

This principle is reflected in the Kyoto Protocol which permits, at Article 4, specifying commitments only for developed country parties, and allowing for differentiation in reporting requirements. For instance, at Article 10 (2), it states that “In the context of the implementation of Article 4, paragraph 1, of the Convention, in accordance with the provisions of Article 4, paragraph 3, and Article 11 of the Convention, and through the entity or entities entrusted with the operation of the financial mechanism of the Convention, the developed country Parties and other developed Parties included in Annex II to the Convention shall: (a) Provide new and

additional financial resources to meet the agreed full costs incurred by developing country Parties in advancing the implementation of existing commitments under Article 4, paragraph 1(a), of the Convention that are covered in Article 10, subparagraph (a). And at Article 12, it establishes a clean development mechanism, the purpose which is “to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under Article 3.”

The Convention further calls upon parties to integrate policies and measures to protect the climate with national development programs, ‘taking into account that economic development is essential for adopting measures to address climate change’ (Article 3.4).

While differential treatment is often necessary to redress past imbalances, at some point it becomes necessary to discard differentiation when states have either achieved a certain economic status or become high polluters. Affirmative action is based on the same premise. In other words, differentiation should be a temporary measure.

Finally, Article 10 of the Kyoto protocol reiterates the obligation of all States Parties under Article 4 of the Climate Change Convention, taking into account their common but differentiated responsibilities. States and other relevant actors have common but differentiated responsibilities. All States are under a duty to co-operate in the achievement of global sustainable development and the protection of the environment. International organizations, corporations (including in particular transnational corporations), non-governmental organizations and civil society should co-operate in and contribute to this global partnership. Industrial concerns have also responsibilities pursuant to the polluter pays principle.

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95 Supra note 69
96 Benjamin J Richardson (et, al), supra note 15, p. 44
97 Article 10: All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, without introducing any new commitments for Parties not included in Annex I, but reaffirming existing commitments under Article 4, paragraph 1, of the Convention, and continuing to advance the implementation of these commitments in order to achieve sustainable development, taking into account Article 4, paragraphs 3, 5 and 7, of the Convention.
98 Rudiger Wolfrum, supra note 4, p. 25
99 Supra note 69
Differentiation of responsibilities, whilst principally based on the contribution that a State has made to the emergence of environmental problems, must also take into account the economic and developmental situation of the State, in accordance with paragraph 3.3. The special needs and interests of developing countries and of countries with economies in transition, with particular regard to least developed countries and those affected adversely by environmental, social and developmental considerations, should be recognized.

Developed countries bear a special burden of responsibility in reducing and eliminating unsustainable patterns of production and consumption and in contributing to capacity building in developing countries, inter alia by providing financial assistance and access to environmentally sound technology. In particular, developed countries should play a leading role and assume primary responsibility in matters of relevance to sustainable development.

Finally, the principles of equity and “common but differentiated responsibilities and respective capabilities” (CBDRC) have been operationalized differently at different stages in the UNFCCC’s development. The Convention itself includes common as well as differentiated responsibilities. It distinguishes broadly between developed and developing countries, and establishes two explicit lists: Annex I countries (developed countries and economies in transition), with more detailed mitigation obligations; and Annex II countries, a subset of these parties, with commitments to support developing country efforts. In a further categorization, the Convention also recognizes the “specific needs and special situations” of least developed countries. Recognizing the potential need to update the lists, the Convention calls for a review of Annexes I and II and establishes a procedure for amending them.

In contrast, the Kyoto Protocol’s negotiating mandate focused exclusively on differentiated commitments, excluding any new commitments for non-Annex I parties. Accordingly, the emissions targets set forth in the Protocol apply only to Annex I parties.

4.4.1.4 Principle of Sustainable development

Sustainable development idea was encapsulated in the proposition that the future has to be worse compensated by the past. Otherwise the future will be worse off than the present and the resulting development is not sustainable. Central concept
in the debate about future economic progress, nationally. Internationally and globally has been sustainable development.\textsuperscript{100}

The term “sustainable development”\textsuperscript{101} itself ought not to occasion much controversy. Development it some set of desirable goals or objectives for society. Those goals undoubtedly include the basic aim to secure a rising level of real income per capita what is traditionally regarded as the standard of living to development that rising real incomes “economic growth”. There is now an emphasis on the quality of life”, on the health of the population, on educational standards and general social wellbeing.

The World Conservation Strategy of 1980 had already advanced the idea of sustainable development and had recognized the challenge of integrating development and environment: Development and conservation are equally necessary for our survival and for the discharge of our responsibilities as trustees of natural resources for the generation to come. But the World Conservation Strategy did not succeed in integrating economics with environment: it did not show what conservation might mean for economic policy, or how misguided economic policy could degrade the environment, or how better economic policy could act as a major force to improve the environment.\textsuperscript{102}

The original articulation of the principle is found in the 1987 Brundtland report\textsuperscript{103}, which stated that sustainable development means development that satisfies

\begin{itemize}
  \item David Pearce, Anil Markandya, Edward B. Barbie, supra note 12, pp. 1, 2 & 9
  \item Sustainable development is an umbrella term encompassing substantive components such as the principles of integration and equity (both intra- and inter-generational), and procedural components such as public access to information, justice and participation in the decision-making process. The procedural components overlap with principles of good governance, further reinforcing the importance of sustainable development as a process. Some of these components have now achieved binding normative status: for example, the principle of integration has been given effect primarily through the environmental impact assessment process and the procedural rights in human rights regimes. Thus, it would be difficult for developing countries to raise their age-old argument that economic development must come first and environmental protection can be addressed only once living standards have been raised.
  \item David Pearce, Anil Markandya, Edward B. Barbie, supra note 12, pp. xiii, 1 & 2
  \item In 1987, the World Commission on the Environment and Development, commissioned by a General Assembly resolution and chaired by Gro Harlem Brundtland, issued a report entitled “Our Common Future,” also known as the Brundtland report. This document famously defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”
  \item The Brundtland Report firmly established the concept of sustainable development as the basis for an integrative approach to economic policy in the coming decades. The message of the Brundtland Report was that it is possible to achieve a path of economic development for the global economy which meets the needs of the present generation without compromising the chances of future generations to meet their needs. As the Brundtland Commission put it:
\end{itemize}
the needs of present generations without jeopardizing the ability of future generations to meet their own needs. In the WSSD, sustainable development was further articulated as having three pillars, namely: economic development, social development, and environmental protection.104

Following the Brundtland report, the concept of sustainable development was recognized at the 1992 United Nations Conference on Environment and Development (UNCED) often referred to as the Rio “Earth Summit.” The 27 principles of the Rio Declaration on Environment and Development refer twelve times to the concept of sustainable development.105

The 1992 Earth Summit also adopted the United Nations Framework Convention on Climate Change and the United Nations Convention on Biological Diversity, both of which referred to the concept of sustainable development. Fundamental to an understanding of sustainable development is the fact that the economy is not separate from the environment in which we live. There is interdependence both because the way we manage the economy impacts on the environment and because environmental quality impacts on the performance of the economy. Our use of fossil fuels is driven by the goals of economic change, and that process will affect global climate, in turn, climate warming and sea level rise will affect climate. In turn, climate warming and sea-level rise will affect the performance of economies.106

The whole debate on climate change should be placed within the context of sustainable development, which requires humankind to integrate environmental protection into the development process, not consider it ex post facto or in isolation. It also requires humankind to integrate social justice into the process, as well as ensure related procedural rights. From a rather vague concept at the time of its enunciation in the Brundtland report (World Commission on Environment and Development, 1987), sustainable development has matured into a set of substantive and procedural norms that have achieved wide-ranging legal expression.107

Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept has however been extremely efficient in fostering debates on the advancement of a global social, economic and environmental agenda.

104 Elli Lonka, supra note 9, p. 52
106 David Pearce, Anil Markandya, Edward B. Barbié, supra note 12, p. 4
107 Benjamin J Richardson (et, al), supra note 15, p. 44-45
Increasing numbers of international treaties address global and regional sustainable development goals and one such international rule-set promoting sustainable development is the climate change regime formed by the United Nations Framework Convention on Climate Change and the Kyoto Protocol.

The UNFCCC is the first, and so far the only, international instrument to refer to the parties’ right to sustainable development. The UNFCCC more specifically aims at enabling economic development in a sustainable manner, recognizing that the goal of sustainable social and economic development will entail a growth in energy consumption, and linking this to climate change rules that provide possibilities for achieving greater energy efficiency and for controlling greenhouse gas emissions.

Hence, it establishes an overall framework for intergovernmental efforts to address the challenge posed by climate change, that is, additional warming of the Earth’s surface and atmosphere which may adversely affect natural ecosystems and humankind. It emphasizes that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases. The UNFCCC is certainly not anti-economy; on the contrary, it regards economic development as an essential element of any sustainable development policy that member States have a duty to promote and a crucial factor in addressing climate change.

The concept of sustainable development also forms the background of the Kyoto Protocol, which intends to contribute via more specific actions such as sustainable forest management and sustainable forms of agriculture. Both international instruments form good illustrations of the current ground-breaking trends in thinking about international law. One particularly interesting innovation is that the Protocol explicitly provides for the involvement of private entities, such as foreign investors, to achieve its goals of limiting and reducing greenhouse gas emissions.108

At the local community level, particularly in poor and disadvantaged communities most vulnerable to environmental changes, global warming poses severe threats to the challenge of sustainable development. At stake is often not just the need

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108 Freya Baetens, Foreign Investment Law and Climate Change: Legal conflicts arising from implementing the Kyoto Protocol through private investment, idlo Sustainable Development Law on Climate Change legal working paper series, December, 2010, pp. 3-4
to make development sustainable, but also the very existence and future of a community’s way of life.\textsuperscript{109}

There is an immense potential for sustainable development to coordinate and, possibly, reconcile different laws relevant in the face of environmental migration. On a technical point of view, sustainable development may act as an interpretative principle, in particular when different laws relevant in the face of environmental migration are contradictory. But more broadly, sustainable development may help in framing new normative frameworks to be applied in the face of environmental migration, and it may be used as the touchstone to evaluate existing policies. Sustainable development assumes that “our vision must not only extend in space, to States beyond national frontiers, but also in time, beyond generational frontiers. We have to cast our vision beyond the present generation and look forward into the future.”\textsuperscript{110}

What the future can afford depends on what we leave them by way of inherited wealth natural and man-made. The philosophy of sustainable development tends to favor strongly the anticipatory approach to environmental policy.\textsuperscript{111}

4.4.1.5 Precautionary principle

The preventive approach is based on the idea that it is better to prevent environmental damage than to employ measures to restore the environment thereafter. The prevention of environmental damage has been \textit{le raison d’être} \textsuperscript{112} of environmental policy.\textsuperscript{113}

The preventive approach has been expanded by a relatively new principle - the precautionary principle.\textsuperscript{114} The precautionary\textsuperscript{115} principle is based on the premise that

\begin{itemize}
  \item \textsuperscript{109} Benjamin J Richardson (et, al), supra note 15, p. 45
  \item \textsuperscript{110} supra note 105
  \item \textsuperscript{111} David Pearce, Anil Markandya, Edward B. Barbie, supra note 12, p. 9
  \item \textsuperscript{112} The phrase means- the purpose that justifies a thing’s existence
  \item \textsuperscript{113} Elii Lonka, supra note 9, p. 50
  \item \textsuperscript{114} The Assimilative Capacity Principle replaced by the Precautionary Principle:
    A basic shift in the approach to environmental protection occurred initially between 1972 and 1982. Earlier the concept was based on the assimilative capacity rule as revealed from Principle 6 of the Stockholm declaration of 1972. The said principle assumed that science could provide policymakers with the information and means necessary to avoid encroaching upon the capacity of the environment to assimilate impacts and it presumed that relevant technical expertise would be available when environmental harm was predicted and there would be sufficient time to act in order to avoid such harm. But in the 11\textsuperscript{th} Principle of the UN General Assembly Resolution on World Charter for Nature, 1982, emphasis shifted to the ‘precautionary principle’ and this was reiterated in the Rio Conference of 1992 in its Principle 15, which reads as follows:
    \begin{itemize}
      \item in order to protect the environment, the precautionary approach shall be widely applied by States according to their capacities. Where there are threats of serious or irreversible damage;
action on environmental matters should be taken even if there is a lack to total scientific certainty. Often reversing the burden to proof and placing it on those who claim that an activity is not damaging.  

The precautionary principle has been quite controversial because it advocates action despite the lack of scientific certainty. Taking action under such conditions could be costly or, even worse, could be proven wrong. The precautionary principle, nevertheless, has been repeated in many international conventions, and the Rio Declaration.  

It is apparent that the combination of human activities and natural processes that produces climate change is a highly complicated process, and that a wide variety of interactions take place between socioeconomic, biological and atmospheric systems to produce outcomes that are subject to a great deal of uncertainty.  

Climate change is a phenomenon that takes place at many scales, from the atmosphere as a whole to local micro-climates and the ecosystems and socioeconomic systems they support. A wide range of emergent effects must be taken into account.  

Climate change is a global threat that satisfies many of the conditions for which a precautionary approach is indicated. In addition, damages are potentially irreversible and severe. Carbon dioxide emissions are irreversible on a time frame of
less than 100 years, and a variety of irreversible environmental effects are possible. Even without environmental irreversibilities, the damages associated with climate change are expected to be severe. These effects are widespread and public, with future generations bearing the brunt of damages.

There is widespread consensus, summarized in the reports of the IPCC, that in the absence of mitigation policies, average global temperatures will rise substantially over the next century, with ‘business as usual projections’ of temperature increases ranging from 2 to 5 degrees Celsius. This increase in temperature will be associated with complex effects on other aspects of climate, such as rainfall patterns and the frequency and intensity of storms, and with consequent effects on natural ecosystems and human activity. Use of a precautionary approach is also indicated by the terms of the UNFCCC.

This principle is reflected in the 1992 UNFCCC Article 3: “The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties.”

Simply put, precaution means the proponent of activities which might lead to either significant, serious or irreversible harm is obliged to take measures (or permit measures to be taken) to prevent this damage (including halting the proposed activities), even if there is a lack of full scientific certainty as to the existence and severity of the risk. It is not a panacea, nor is it intended for use in all situations. It is, however, a useful tool for a more systematic response to the problem of scientific uncertainty in environment and health decision-making.

120 Supra note 69
Decision-making processes should endorse a precautionary approach to risk management and in particular should proceed to the adoption of appropriate precautionary measures even when the absence of risk seems scientifically assured.

The traditional remedies available under international law such as restitution, compensation, and guarantees against non-repetition would not bring much relief to the victims of climate change. Restitution of the environment is often impossible. A declaratory judgment may bring some relief, as would compensation, but several questions remain unresolved. How would courts compute damage to the environment itself, loss of lives, loss of culture and even the loss of an entire country (in the case of a submerged small island state)? While international law has rules on state succession, it has never dealt with the disappearance of an entire state, as could happen with sea level rise associated with climate change. The inadequacy of individual responsibility and the trend towards creating new forms of risk pooling, and new forms of collective risk management, are all relevant to global environmental issues. However, given that climate change is tied to pervasive, day-to-day activities of many people worldwide, the question arises how these novel forms of establishing liability can be applied in relation to these activities.121

The precautionary principle is an important guideline for setting anticipatory policy on the basis of incomplete scientific knowledge. Yet it has been controversial, in part because of disagreement about how to implement it when scientific understanding of a novel threat is preliminary. An important source of disagreement is the question of proportionality - the extent to which the ex ante consideration of costs should be admitted alongside the competing desire to achieve a high level of protection with respect to identified threat to the environment (or public health). Proportionality is an unresolved question when preliminary evidence precludes use of probabilistic methods for assessing risk. This issue becomes especially important for international decisions where transnational cooperation is important.122

Thus, the precautionary principle is an important element of public policy in response to threats to environmental health, such as climate change. However, the principle remains controversial and its implications in particular cases are not always clear.123

121 Benjamin J Richardson (et, al), supra note 15, pp. 53-54
122 supra note 119
123 Supra note 118
4.4.1.6 Polluter pays Principle

The Polluter Pays Principle (PPP) is an environmental policy principle which requires that the costs of pollution be borne by those who cause it. In its original emergence the Polluter Pays Principle aims at determining how the costs of pollution prevention and control must be allocated: the polluter must pay.

Under the polluter pays principle the polluter should pay for the costs of: preventing pollution or reducing pollution to comply with applicable standards and laws; preventing, controlling, abating and mitigating damage to the environment caused by pollution; making good any resultant environmental damage, such as cleaning up pollution and restoring the environment damaged; and making reparation (including compensatory damages and compensatory restoration) for irremediable injury. The polluter pays principle plays a role both in the prevention of pollution and in remediation, if pollution were to occur. The principle plays a role in prevention by justifying the imposition of responsibility for prevention and control of pollution arising from the development and use of land on the person carrying out that activity. This can be done by the imposition of conditions on any approval necessary to carry out the activity.124

The first mention of the Principle at the international level is to be found in the 1972 Recommendation by the OECD Council on Guiding Principles concerning International Economic Aspects of Environmental Policies, where it stated that: “The principle to be used for allocating costs of pollution prevention and control measures to encourage rational use of scarce environmental resources and to avoid distortions in international trade and investment is the so-called Polluter-Pays Principle.” It then went on to elaborate: “This principle means that the polluter should bear the expenses of carrying out the above-mentioned measures decided by public authorities to ensure that the environment is in an acceptable state.”125

The PPP has also been reaffirmed in the 1992 Rio Declaration126 and is mentioned, recalled or otherwise referred to in both Agenda 21 and the World Summit on Sustainable Development Johannesburg Plan of Implementation.127

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124 http://www.lec.lawlink.nsw.gov.au/argbasev7wr/_assets/lec/m4203011721754/preston_the%20pollu
126 Principle 16: “National authorities should endeavor to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.”
The polluter pays principle was enunciated clearly in the international arena in the Rio Declaration. The principle basically demands for the person who is in charge of polluting activities to be financially responsible for the damage s/he causes. Some commentators have underlined that the principle has merely a rhetoric value because most polluters will be able to pass the costs of pollution onto consumers. Also, in most cases, it is difficult to identify the polluter. Although the polluter pays principle has been enunciated in many international instruments, especially those adopted after 1992, when decisions are made about who should bear the cost of polluting activities it is not always followed.

The International Law Commission guidelines on the prevention of transboundary harm from hazardous activities not prohibited by international law refer to the factors that must be taken into account for an equitable balance of interests between a polluting state and a state that is the recipient of transboundary pollution. In more detail, it is provided that for an equitable balance of interests between these two states to be achieved: “The degrees to which the State of origin and, as appropriates the State likely to be affected are prepared to contribute to the costs of prevention” must be taken into account.\(^\text{128}\)

At the international level the Kyoto Protocol is an example of application of the PPP: parties that have obligations to reduce their greenhouse gas emissions must bear the costs of reducing (prevention and control) such polluting emissions.\(^\text{129}\)

4.4.1.7 The Principle of Integration and Interrelationship in relation to Social, Economic and Environmental objectives

The concept of sustainable development integrates economic, environmental and social (including human rights) priorities. Principle 4 of the 1992 Rio Declaration States that in “order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.” The need for integration was strongly reinforced and highlighted in the 2002 World Summit on Sustainable Development. Indeed, in the 2002 Johannesburg Declaration on Sustainable Development, states assumed “a collective responsibility to advance and strengthen the interdependent and mutually reinforcing

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\(^\text{127}\) Supra note 125  
\(^\text{128}\) Elli Lonka, supra note 9, pp. 51-52  
\(^\text{129}\) Supra note 125
pillars of sustainable development - economic development, social development and environmental protection.”

Integration of laws and policies in environment protection has directly referred to many global treaties, using different textual formulations depending on the context and purpose of the instruments. It is a keystone provision of the 1992 Rio Conventions. This principle is reflected in the UNFCCC which states that “Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change.”

This is made operational in the 1997 Kyoto Protocol, which states at Article 14, for example, that “Each Party included in Annex I shall strive to implement the commitments mentioned in paragraph 1 above in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties.”

The sustainable development concept, polluter pays principle, and precautionary principle may not be the principles that would resolve future environmental disputes. Other principles, such as that of equitable sharing of costs of polluting activities and a preventive rather than a precautionary approach, may gain ground. The principles, though, articulated as such, are informing the intellectual background of decision makers and are helping to establish a common credo among those who are involved in the everyday shaping of international environmental affairs especially the climate regime.

4.4.2 Administrative Provisions

Several institutions and bodies work within the framework of the Convention. These include those established by the Convention - the Conference of the Parties to the Convention (COP), the subsidiary bodies (SBs), the Bureau and the secretariat. They also include other bodies established by the COP, in accordance with Article 7.2(i) of the Convention: committees, working groups and expert bodies.

Conference of the Parties (COP)

The supreme body of the Convention is the Conference of the Parties (COP). The UNFCCC established a Conference of the Parties to the Convention to carry out...
is work and to adopt and make the decisions necessary to promote the effective implementation of the Convention.\textsuperscript{131}

The COP comprises all the states that have ratified or acceded to the Convention and is the highest decision-making authority of the Convention.\textsuperscript{132} The meeting of the parties to the UNFCCC is referred to as the COP. The meetings also include the meeting of the Parties to the Kyoto Protocol (MOP). Thus, these meetings are known as the COP/MOP.

The convention is administered by the COP which is the supreme body of the convention where by the COPs role is to promote and review the implementation of the Convention. This review takes place by assessing, inter alia all information provided by the parties on the implementation of the convention and the effects observed, as a result of measures undertaken, including environmental, economic, and social effects. The COP must additionally-coordinate the measures adopted by the parties and guide the development and refinement of comparable methodologies for the assessment of greenhouse emissions and removals by sinks. The COP shall consider and agree on methodologies (for greenhouse emissions and removals by sinks) at its first session and review them regularly thereafter. The COP must further agree on methodologies for the development of national inventories' and agree on criteria for joint implementation.

The climate change process revolves around the annual sessions of the COP, which bring together all countries that are Parties to the Convention. Article 7.2 defines the COP as the “supreme body” of the Convention, as it is its highest decision-making authority.\textsuperscript{133}

\textsuperscript{131} Scott D. Deatherage, \textit{supra} note 49, p. 42
\textsuperscript{132} \textit{Supra} note 55
\textsuperscript{133} According to Article 7.2, the COP is responsible for reviewing the implementation of the Convention and any related legal instruments, and has to make the decisions necessary to promote the effective implementation of the Convention. In particular, its role is to:
1. examine the Parties’ commitments in light of the Convention’s objective, new scientific findings and experience gained in implementing climate change policies;
2. promote and facilitate the exchange of information on measures adopted by Parties to address climate change and its effects;
3. facilitate the coordination of measures adopted by Parties to address climate change and its effects, if requested to do so by two or more Parties;
4. promote and guide the development and refinement of comparable methodologies for activities related to implementing the Convention, such as preparing inventories of GHG emissions and removals and evaluating the effectiveness of measures to limit emissions and enhance removals;
5. assess the implementation of the Convention by Parties, the effects of the measures taken by them and the progress made towards achieving the ultimate objective of the Convention;
The first meeting of the COP was held in Berlin, Germany. At this meeting, the parties reached agreement on developing a schedule for developed countries to reduce their GHG emissions. The outcome of this first COP meeting was “Berlin Mandate.” From this mandate, the parties began work that led to the negotiation of the Kyoto Protocol, so named as the COP 3 meeting was held in Kyoto, Japan.\textsuperscript{134} It will continue to meet on a yearly basis unless the Parties decide otherwise and will periodically review existing commitments in light of the Conventions objective, new scientific findings, and the effectiveness of national climate change programmes. The COP can adopt new commitments through amendments and protocols to the Convention; such as the Kyoto Protocol.\textsuperscript{135}

Member countries have met on an annual basis following the entry into force of the UNFCCC acting as the prime authority of the Convention. Each year all parties meet for a period of two weeks to review the implementation of the Convention with guidance from the Subsidiary Body for Implementation (SBI), to evaluate the state of the climate and the progress that has been made towards achieving the ultimate objective. National communications and emissions inventories are reviewed. Decisions are adopted to promote effective measures to tackle climate change and negotiate substantive commitments for the future under the counsel of the Subsidiary Body for Scientific and Technological Advice (SBSTA).

Subsidiary Bodies

The Convention also establishes two subsidiary bodies. The SBSTA provides the COP with timely information and advice on scientific and technological matters relating to the Convention. SBSTA assists the COP in the execution of its functions. The purpose of this body is to provide scientific information and advice and is comprised of government representatives that are experts in climate change issues.

6. consider and adopt reports on the implementation of the Convention, and ensure their publication;
7. make recommendations on any matters necessary for the implementation of the Convention;
8. seek to mobilize financial resources;
9. review reports submitted by its SBs and provide guidance to them; and
10. exercise such other functions as are required to achieve the objective of the Convention as well as all other functions assigned to the COP under the Convention

\textsuperscript{134} Scott D. Deatherage, supra note 49, p. 42
\textsuperscript{135} Supra note 63
A subsidiary body is established for implementation the purpose of which is to assist the COP in assessing and reviewing implementation.\textsuperscript{136} The SBI helps with the assessment and review of the Conventions implementation.

The SBSTA and the SBI are the main working bodies of the Convention. They meet twice a year for one to two weeks; the first time normally in mid-year and the second in conjunction with the COP. Given the more technical nature of their work, they tend to involve technical specialists rather than high-level political negotiators, and to attract somewhat fewer participants (around 1,500) than the COP. The ways of organizing the work of the SBs are similar to those of the COP\textsuperscript{137}

The Convention lays down the general distribution of tasks to the SBs (Article for the SBSTA and Article 10 for the SBI) and the COP has further defined their areas and division of work. The division of labor has also further evolved during the Convention process. In general terms, the SBSTA functions as the “link between the scientific, technical and technological assessments of information provided by competent international bodies, and the policy-oriented needs” of the COP, while the SBI develops recommendations to assist the COP “in its review and assessment of the implementation of the Convention and in the preparation and implementation of its decisions” While there are some areas of work which clearly lie within the responsibility of one SB (such as “methodological issues” for the SBSTA, or “administrative and financial matters” for the SBI), the SBSTA and SBI cooperate on a number of cross-cutting issues that touch on both their areas of expertise. In the interests of efficiency, it is generally preferable for only one to take the overall responsibility for a given issue. Where no overall responsibility for an issue is assigned to either, agendas are organized to avoid having both SBs dealing with the same issue in parallel sessions

The COP and its subsidiary bodies are serviced by a secretariat. The secretariat, also known as the Climate Change Secretariat, services the COP, the SBs, the Bureau and other bodies established by the COP. The interim secretariat that functioned during the negotiation of the Convention became the permanent secretariat in January 1996. The Secretariat is appointed by the Conference of the Parties and has general administrative functions as in most international environmental conventions. The Secretariat cannot comment on states' implementation but can help to disseminate

\textsuperscript{136} Elli Lonka, supra note 9, p. 364

\textsuperscript{137} http://unfccc.int/resource/docs/publications/handbook.pdf accessed on 29th September 2013
the information contained in the reports submitted by states and can report on its own
activities. Its mandate is laid down in Article 8 of the Convention.

The secretariat arranges for sessions of the COP and its subsidiary bodies, drafts official
documents, services meetings, compiles and transmits reports submitted to it, facilitates assistance to Parties for the compilation and communication of
information, coordinates with secretariats of other relevant international bodies, and
reports on its activities to the COP. It is based in Bonn, Germany.

Financial mechanism

The financial mechanism is a major source of funding. The mechanism is
guided by, and accountable to, the COP to the Convention, which decides on policies,
programme priorities, and eligibility criteria. The Convention states that the operation
of the financial mechanism can be entrusted to one or more international entities with
an equitable and balanced representation of all Parties within a transparent system of
governance.

The Convention assigns this role to the Global Environment Facility (GEF) on an interim basis and has entrusted the GEF with this responsibility on an on-going basis and to review the financial mechanism every four years. In 2001 the COP agreed on the need to establish two new funds under the Convention in a Special Climate Change Fund and a fund for least developed countries to help developing countries adapt to climate change impacts, obtain clean technologies, and limit the growth in their emissions. These funds are to be managed within the GEF framework.

Developing countries need financial resources so that they can address the
causes and consequences of climate change. The Climate Change Convention therefore states that developed countries should provide new and additional funds to help developing countries meet their treaty commitments. Support can come from both bilateral and multilateral sources.

The GEF pays the agreed full incremental costs of projects to protect the
global environment. GEF funds complement regular development assistance, offering

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138 Elli Lonka, supra note 9, pp. 363-364
139 Supra note 63, Sheets 17-19
140 Ibid, Sheet. 28
141 The idea of an international mechanism to support projects benefiting the global environment was first discussed in 1987 by the Brundtland Commission. The Global Environment Facility was established in 1991, and was launched several years later with the World Bank, the United Nations Development Programme (UNDP), and the United Nations Environment Programme (UNEP) as implementing agencies. By the time the Earth Summit was held in 1992, the GEF was considered a possible source of funds for implementation of the biodiversity and climate change conventions.
developing countries the opportunity to incorporate environmentally-friendly features that address global environmental concerns. For example, if a country invests in a new power plant to promote economic development, the GEF may provide the additional, or incremental, funds needed to buy equipment for reducing the emissions of greenhouse gases. In this way, GEF funds normally cover only a portion of projects entire costs. The GEF also funds enabling activities, including the “agreed full costs” of preparing national communications.\(^{142}\) Its role is to transfer funds and technology to developing countries on a grant or concessional basis.

**4.4.4 Critical analysis of UNFCCC**

The UNFCCC agreed in 1992 and ratified in 1995, is a sound structure for negotiations. The ultimate objective of the UNFCCC is the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. This is a long-term objective that will require emissions paths to be reduced progressively over the 21st century and beyond.\(^{143}\)

Although strong action is required for global climate change, negotiations have moved slowly under the UNFCCC and the outputs of the UNFCCC approach have so far not been able to bring significant effects on climate change policy. It is not only the resistance of individual countries to curb their emissions, but the characteristics of the UNFCCC system and negotiations process have been criticized to create obstacles to advancing the climate change agenda.\(^{144}\)

As the formal UNFCCC process has evolved, the broader regime complex addressing climate change has grown and diversified giving rise on the agenda other established regimes, like the International Maritime Organization, the International Civil Aviation Organization, and the Montreal Protocol, and has spawned a range of new international initiatives and forums. A major consideration in the future evolution of the international climate effort is the respective roles of, and linkages among, the UNFCCC and these parallel efforts.\(^{145}\)

\(^{142}\) Supra note 63, Sheets 17-19, 28

\(^{143}\) Policy Responses to Climate Change in World Nuclear Association (WNA) available at http://www.world-nuclear.org/info/Energy-and-Environment/Policy-Responses-to-Climate-Change/


The climate change effort has continued to evolve in important ways. A series of COP decisions have elaborated a system for the reporting and expert review of national communications and greenhouse gas inventories, and for peer review of new biennial reports. The UNFCCC’s financial mechanism has been strengthened, most recently with the establishment of the Green Climate Fund. But The Convention itself sets no mandatory limits on GHG emissions for individual countries and contains no enforcement mechanisms. In that sense, the Convention is considered legally non-binding creating loop holes for the polluters. Therefore an effective and binding legal instrument is necessary to curb global warming.